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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,803	08/16/2001	Walter J. Schon	002.0212.01	3342
28875	7590	09/20/2005	EXAMINER	
Zilka-Kotab, PC P.O. BOX 721120 SAN JOSE, CA 95172-1120			CHAI, LONGBIT	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,803

Applicant(s)

SCHON ET AL.

Examiner

Longbit Chai

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10,12,14-18,20,22-26,28-33,35-39,41-46,48-51 and 53-70 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,12,14-18,20,22-26,28-33,35-39,41-46,48-51 and 53-70 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/1/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 2, 8, 11, 17, 21, 25, 27, 31, 34, 38, 40, 41, 44, 47, 49, 52, 54, 59, 62, 66 and 68 – 69 have been canceled; claims 1, 10, 20, 26, 33, 39, 46, 51, 57, 60, 64 and 67 have been amended in an amendment filed 3/4/2005. Claims 1, 3, 5, 5 – 10, 12, 14 – 18, 20, 22 – 26, 28 – 33, 35 – 39, 41 – 46, 48 – 51 and 53 – 70 have been examined.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/4/2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 5, 5 – 10, 12, 14 – 18, 20, 22 – 26, 28 – 33, 35 – 39, 41 – 46, 48 – 51 and 53 – 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brothers (Patent Number: 5799083), in view of Barton (Patent Number: 5912972), and in view of Tsuria (Patent Number: 6178242).

As per claims 1, 10, 20, 26, 33, 39, 46, 51, 57, 60, 64 and 67, Brothers teaches a system for automatically protecting private video content using embedded cryptographic security, comprising:

a recorder frame buffer dividing a substantially continuous video signal representing raw video content into individual frames which each store a fixed amount of data in digital form (Brothers: see for example, Column 10 Line 45 – 52 and Column 9 Line 60 – 63);

an encryption module encrypting each individual frame into encrypted video content using an encryption cryptographic key and storing the encrypted frames on a transportable storage medium (Brothers: see for example, Column 10 Line 45 – 52 and Column 9 Line 60 – 63: the digital tape is interpreted as transportable storage medium);

a decryption module retrieving encrypted frames from the transportable storage medium and decrypting each encrypted frame using a decryption cryptographic key that is verified prior to decryption (Brothers: see for example, Column 8 Line 23 – 27); and

a playback frame buffer combining the decrypted frames into a substantially continuous video signal representing the raw video content in reconstructed form (Brothers: see for example, Column 7 Line 44 – 47: the video signal must be

representing the raw video content in reconstructed form in order to be accessed by the viewfinder and external output stage as taught by Brothers).

However, Brothes does not disclose expressly a signature module generating a fixed-length original cryptographic hash from at least one such individual frame, encrypting the original cryptographic hash using an encryption cryptographic key, and storing the encrypted original cryptographic hash as a digital signature on the transportable storage medium.

Barton teaches a signature module generating a fixed-length original cryptographic hash from at least one such individual frame, encrypting the original cryptographic hash using an encryption cryptographic key, and storing the encrypted original cryptographic hash as a digital signature on the transportable storage medium (Barton, see for example, Column 4 Line 18 – 27, Column 4 Line 1 – 7 and Column 6 Line 37 – 42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Barton within the system of Brothers because (a) Brothers discloses the authentication of video frames using the encryption / decryption techniques (Barton: see for example, Column 2 Line 2 – 3), and (b) Barton further teaches providing a cost saving and efficient mechanism for the authentication of video frames by using a digital signature through a 16-bit checksum (i.e. hash value) of video frames (Barton: see for example, Column 4 Line 18 – 27, Column 4 Line 1 – 7 and Column 6 Line 37 – 42: using a digital signature through a 16-bit checksum (i.e. hash value)).

Brothers in view of Barton further teaches:

a verification module retrieving the digital signature from the transportable storage medium, decrypting the encrypted original cryptographic hash using a decryption cryptographic key, generating a verification fixed-length cryptographic hash from at least one such individual frame, and comparing the verification cryptographic hash and the original cryptographic hash (Barton: see for example, Column 4 Line 18 – 27, Column 4 Line 1 – 7, Column 6 Line 37 – 42, Column 4 Line 30 and Column 6 Line 37 – 44) & (Brothers: see for example, Column 8 Line 23 – 27).

Brothers in view of Barton further teaches a programmable memory to store at least one cryptographic key for use with the encryption and decryption algorithms (Brothers: Column 1 Line 59 – 61). However, Brothers in view of Barton does not disclose expressly a removable storage medium storing at least one of the encryption cryptographic key and the decryption cryptographic key.

Tsuria teaches a removable storage medium storing at least one of the encryption cryptographic key and the decryption cryptographic key (Tsuria: Column 8 Line 54 – 56: smart card is a removable security element).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Barton within the system of Brothers because (a) Brothers discloses the authentication of video frames using the encryption / decryption techniques (Barton: see for example, Column 2 Line 2 – 3), and (b) Tsuria further teaches providing an enhanced security system to protect VCR recorded digital data streams (Tsuria: see for example, Column 1 Line 61 – 64).

As per claims 3, 12, 22, 28, 35, 58, 61 and 65, Brothers as modified further teaches providing the encryption and decryption algorithms in use of a public key system (Brothers, see for example, Column 2 Line 14 – 15). Official Notice is taken that the use of an asymmetric cryptographic key pair comprising a private key corresponding to the encryption cryptographic key and a public key corresponding to the decryption cryptographic key for digital signature verification of is one of the well-known methods in the field.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a private key corresponding to the encryption cryptographic key and a public key corresponding to the decryption cryptographic key for digital signature verification.

As per claim 4 and 13, Brothers as modified further teaches a validation module validating the decryption cryptographic key against user-provided credentials prior to decrypting the encrypted frames (Tsuria: Column 8 Line 63 – 65).

As per claims 5, 14, 23, 29, 36 and 42, Brothers as modified further teaches an asymmetric cryptographic key pair comprising a public key corresponding to the encryption cryptographic key and a private key corresponding to the decryption cryptographic key (Barton, see for example, Column 7 Line 19 – 26).

Art Unit: 2131

As per claim 6, 15, 48, and 53, see same rationale addressed above in rejecting claim 5.

As per claims 7, 16, 24, 30, 37 and 43, Brothers as modified further teaches a symmetric cryptographic key pair comprising a substantially identical key corresponding to each of the encryption cryptographic key and the decryption cryptographic key (Brothers, see for example, Column 2 Line 11 – 12).

As per claims 9, 18, 50 and 55, Brothers as modified further teaches teaches a set of cryptographic instructions stored on the removable storage medium and employing at least one of the encryption cryptographic key and the decryption cryptographic key (Tsuria: Column 6 Line 63 – Column 7 Line 8).

As per claim 19, 32, 45, 56, 63 and 70, Brothers as modified further teaches a computer-readable storage medium for performing the methods is provided as taught by Brothers in view of Barton (Brothers: see for example, Column 3 Line 34 – 62).



Art Unit: 2131

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788.

The examiner can normally be reached on Monday-Friday 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Longbit Chai  
Examiner  
Art Unit 2131

  
LBC

  
AYAZ SHEIKH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100